

AMENDMENTS TO THE CLAIMS:

Complete Listing of Claims

1 1. (currently amended) A method for estimating noise in an integrated
2 circuit substrate, the integrated circuit adapted to be supplied by power
3 having a predetermined supply voltage applied between a substrate and a
4 power supply node, comprising the steps of:
5 estimating core power supply noise of the integrated circuit, by
6 providing a power dissipated by the integrated circuit when
7 clocked at a predetermined clock frequency;
8 computing the current of the integrated circuit from the power
9 dissipated and the supply voltage;
10 creating a model file block for a technology process for
11 fabricating the integrated circuit, the model block comprising circuitry
12 having components which can be clocked to provide signal switching;
13 determining the number of model blocks that, at the
14 predetermined clock frequency, conduct the same current as the
15 computed current of the integrated circuit;
16 estimating noise generated by the number of model blocks by
17 performing a transient analysis on the model blocks, and representing
18 the estimated model block noise as a model block voltage source;
19 estimating noise generated by a digital circuit and input/output
20 ("I/O") circuitry to be implemented in the integrated circuit, and
21 representing the estimated I/O noise as an I/O voltage source;
22 generating a substrate netlist for the integrated circuit;
23 determining a floorplan for the integrated circuit and providing
24 said model block voltage source and said I/O voltage source in
25 accordance with the floorplan;
26 running transient simulations with predetermined input values;

27 determining the if-predetermined noise of the integrated circuit
28 in a selected portion of the integrated circuit using said model block
29 voltage source and said I/O voltage source in accordance with the
30 floorplan and the substrate netlist requirements are met in results of
31 the transient simulations.

1 2. (new) A method as in Claim 1 wherein the step of determining
2 a floorplan is performed by providing the model block with a substrate
3 contact and an N-well contact.

1 3. (new) A method as in Claim 1 wherein the step of estimating
2 noise is performed by running simulations of the model block at the
3 predetermined clock frequency.

1 4. (new) A method as in Claim 3 wherein the step of estimating
2 noise is performed by running simulations of the model block at the
3 predetermined clock frequency to obtain PWL voltage waveforms, and
4 wherein the step of determining a floorplan is performed by providing
5 said model block voltage source as the PWL voltage waveforms.